1: Spier E-5 (1918) 1928
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in 1897, less than 300[1]; 1899, 261[2]; 1902, 233; 1903, 237; 1905, 174; 1906, 166 (?); 1907, 172.

The generation rate, i.e., the interval in years between parent's and child's birth, may be of interest. This is calculated from a revision of the agency census roll.

Average difference in years between father and child: 33.7 yrs (103 cases).
Average difference in years between mother and child: 28.2 yrs. (77 cases).
Average difference in years between parent and child: 31.4 yrs. (180 cases).

These Indians resemble the lower Colorado River tribes in general appearance, in build and physiognomy, more than the Navaho, Apache, and Zuñi. Hrdlička notes, however, that "they are physically identical with Apache." The stature of Walapai and Havasupai together is given by him as 168.4 cm. for men and 157.7 cm. for women.[4] There is a marked family resemblance within the group.[5] Their light complexions are noticeable; this has been remarked by Garcés, Cushing, and Smart.[6]

Annual Cycle

A brief description of the yearly round of life will make the details of this sketch more coherent.[7] Early spring finds the Havasupai returning to the canyon from the plateau where they have spent the winter. By this time the snows have melted and they must descend to a water supply. The weather being still inclement some use is made of the caves or rock-shelters at the base of the cliffs while they repair the dirt covering of the houses in the fields below. Spring planting begins in the middle of April; meanwhile they live on corn taken from the little granaries in the cliffs and on mescal gathered from the red sandstone benches where it ripens in May.

Summer life is the fullest of the year. Everyone lives in the village, except for the few who are away trading Hopi and Navaho products with the Walapai or at Oraibi with buckskins of their own or Walapai manufacture. Morning finds the families in the fields; the heat of the afternoon (never excessive) is spent in the sweatlodge or at some favorite spot gambling and gossiping. Corn ripens throughout the summer, from

[1] *Reports of the Commissioner of Indian Affairs*, 1897, 104; 1902, 163; 1903, 500; 1905, I, 164; 1906, 178; 1907, 177.
[2] *Statistics of Indian Tribes*, 37.
[3] This figure is probably incorrect due to a deficiency in the number of women of child bearing years (see p. 209). When the mothers are principally old women, as in this case, the figure is too high, because according to chance the younger children of such women would more frequently figure among the survivors than the older. (The longer the course of the children's life the greater the chance of their survival.)
[4] Hrdlička, (g), 413.
[5] A peculiar configuration of the whorls of the ear is common.
[6] Coues, 341; Cushing, 546; Smart, 418.
[7] See also Spier (d).

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the abdomen, and to this end her mother continues to press it. She is given a little soup, prepared from dry corn, if she wants it. This procedure is repeated on the three subsequent nights. Her husband, too, bathes four times. Sometimes delivery is difficult, labor lasting three days or even four. Then everyone is told to come and advise what course to take. A woman who has a good delivery returns to her tasks after one night; if it has been difficult she can work after four days. Her husband, however, is not prohibited from working. 844 846

Twin births are rare and multiple births have never been heard of. Monsters are unknown. Three instances of twin births were recalled by my old informant: Pakádagó'ovà, now a man of sixty; twin sisters in the past generation; and a pair now dead, were born to a young woman.[1] 845

Twins (*huwdpídjá*) differ from other children only in the sympathetic bond that unites them. If one sickens and dies, the other will also.[2] Pakádagó'ovà's twin sister was destroyed at birth; wrapped in a blanket and buried. To indicate the efficacy of the custom, my informant pointed out that the survivor has lived to be an old man. In this case he did not know which twin was born first, nor why the girl was selected. It is believed that twins are due to the circumstance that the pregnant woman, before the foetus is well-developed, lies first on one side, then turns quickly on the other, thus splitting the "fluid" in two parts. Intercourse during pregnancy does not cause this, yet such relations are improper. [843]

The old women attendants mould the head and face of the new-born child lightly with the finger tips; point the chin, pinch up the bridge of the nose, pull down the ears, press up the hard palate, and rub the thumb along the gums. They repeat this whenever the baby is washed, straightening the body and limbs, and unclenching the fists. No intentional deformation is practised. Occipital flattening occurs but rarely, and that little is moderate and presumably accidental.[3] [844] 856 [304]

Contraceptive devices are unknown. Some women are barren (*pik'tgl0datádj*, barren woman—used contemptuously): it is not known why. One does not pray for children, but a young girl who is barren may drink a decoction of ground abalone shell in water. The shell (*hólkal'ó'pd*) is obtained through the Mohave. The lines on it represent the ocean waves. 842 [439]

[1] The ratio of twin births among whites is 1:89.1 or 93.1 (Exiney, 262). If the death rate for twins is no greater than for others, we would expect to find only one or two living in a population of 170. [163]

[2] A Paviotso belief (Lewis, (1), 295).

[3] Hrdlička, (f), 65 records one instance among twenty-five individuals.

the males for all the Colorado River tribes." (Spier observed that Hrdlička, on the contrary, had found in the 1900 census an excess of females over males after age 55 among all Indian tribes.) 162

Recorded data for the past decade, and data obtained for about a decade immediately preceding it, reveal a significantly higher proportion of Havasupai males in the ratio at birth, with a consistently higher infant and early childhood mortality rate for males. In the 1950 population below age 10, the group total was 55 males and 28 females, almost exactly two males to each female. Between the ages of 10 and 50, a nearly balanced sex ratio exists in all age brackets. [163] [165]

Spier (1928, 209) found that above and below the ages of 20 and 45 the sexes were nearly equal in numbers in 1918, and equality in these groups has continued to the present. (The individuals whose ages were below 20 in 1918 would have been 28 to 48 in 1950, and those over 45 would have been over 73 in 1950).

Among possible causes of excess in males among the Havasupai, female infanticide must be ruled out, because the inequality did not appear above or below the age group in which the excess appeared in the 1918 population, and since that time the sexes have been equal in number at that age. Although a few young women were stolen now and then by enemy tribes in past times, the number kidnapped in a given generation probably was insignificant, and such raids would have ceased before the turn of the century. Thus, it would have no bearing on the 20 to 45 age bracket of 1918. A cause which suggests itself for the particular group in question is a measles epidemic which reduced the 1903 population of 237 to 177 in 1905--if, for some reason, fatalities were much greater among females than among males. Unfortunately, we have no record of individual deaths for that time. [165]

Above the age of 50, the longevity and survival rate of males over females is marked, but it should be noted that the 1950 population above that age is comprised almost entirely of the group Spier observed at the ages of 20 to 45, and which, in 1918, had a male-female ratio of two to one. Thus, the present imbalance in the older age levels developed while these generations were passing through earlier age brackets, and is not a recent development, except that the age ratio has become more marked in favor of males as the group advanced in age. Spier (1928, 209) suggests possible loss in childbirth to explain the discrepancy noted by him. Available data reveal that, despite the larger number of males born, by the age of 20 the sex ratio has reached a balance throughout the last 30 year period and that, in the group now between 20 and 50, it has maintained that balance. This may support Spier's thesis, since it is this age group that has had the first improved medical care in childbirth and various feminine disorders.